



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/743,253	12/22/2003	Dustin W. Carr	Carr 8-4-5	4460
46850	7590	03/23/2006	EXAMINER	
MENDELSON & ASSOCIATES, P.C. 1500 JOHN F. KENNEDY BLVD., SUITE 405 PHILADELPHIA, PA 19102			DOAN, JENNIFER	
			ART UNIT	PAPER NUMBER
			2874	
DATE MAILED: 03/23/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/743,253	Applicant(s) CARR ET AL.	
	Examiner Jennifer Doan	Art Unit 2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 09 January 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,3-13 and 15-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,3-13,15-24 and 32-38 is/are allowed.
- 6) ☒ Claim(s) 25 and 29 is/are rejected.
- 7) ☒ Claim(s) 26-28,30 and 31 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Applicants' amendment filed on January 9, 2006, has been considered and entered.

Applicant's submission of an amendment is prompted the new ground(s) of rejection presented in this Office action. Accordingly, this action is made final.

### ***Specification***

1. Applicants' cooperation is requested in correcting any errors of which applicants may become aware in the specification.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

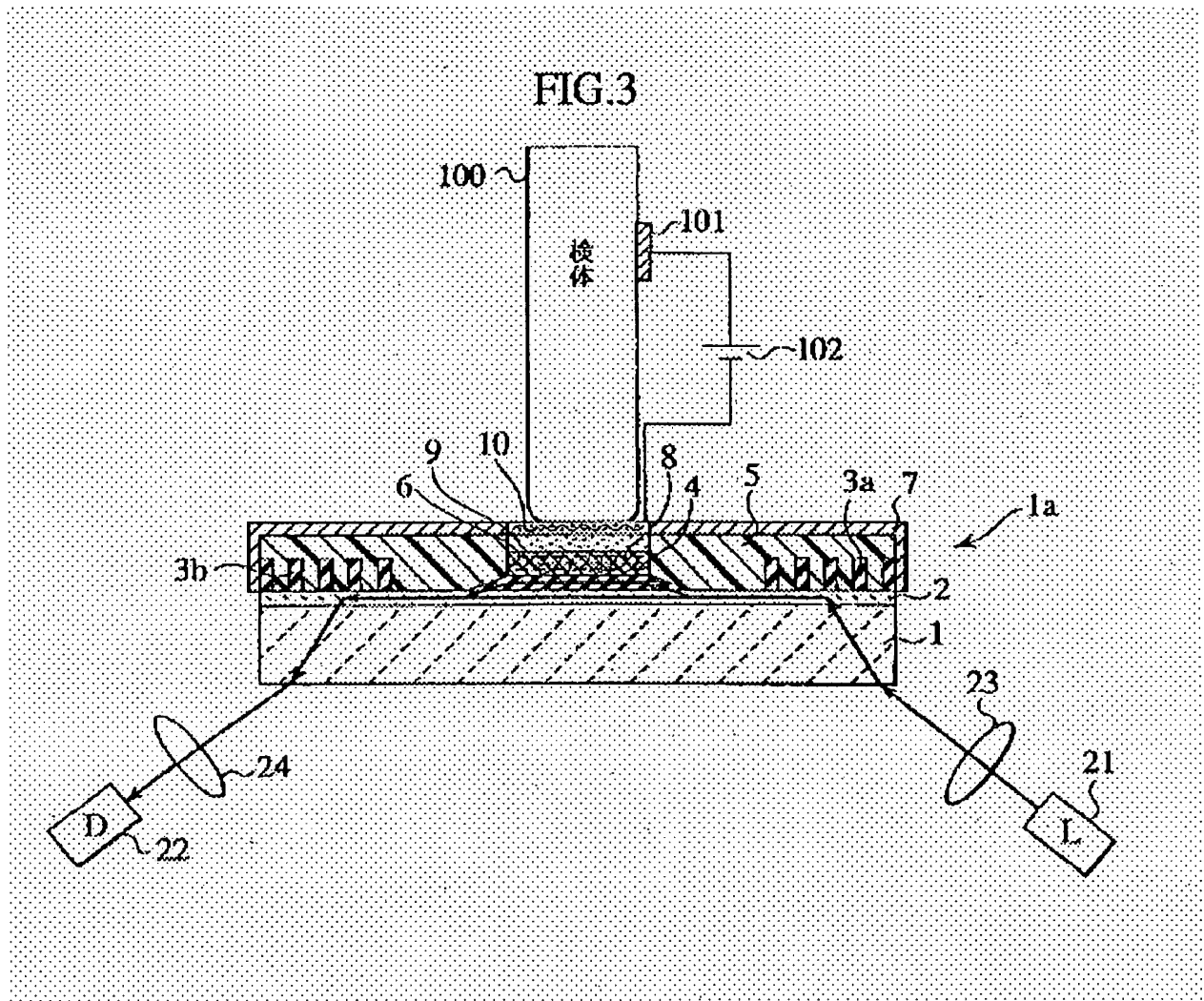
3. Claims 25 and 29 are rejected under 35 U.S.C. 102(e) as being anticipated by Uchiyama et al. (U.S. Patent 6,903,815).

Art Unit: 2874

With respect to claims 25 and 29, Uchiyama et al. (figure 3) disclose a method and a device, comprising an optical waveguide (4) having a first grating, wherein at least a portion of the waveguide (4) has a functional layer (8) adapted to bind an analyte (100); when the analyte (100) binds to the functional layer (8), the binding changes optical characteristics of the waveguide (column 9, lines 49-56); and the device further comprises one or more other optical waveguide (2), each having a grating (3a), wherein each grating has an optical reflection band characterized by a center wavelength; and at least two gratings (3a and 3b) have different reflection bands.

27. (New) In a device of claim 26, where the AWG and the optical waveguide are implemented in a single integrated device.

28. (New) The device of claim 25, wherein at least two optical waveguides have different functional layers adapted to bind different analytes.



### ***Allowable Subject Matter***

4. Claims 26-28, 30 and 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art of record fails to disclose or reasonably suggest a method and a device further comprising an arrayed waveguide grating (AWG) having an input port and two or more output ports coupled to the two or more optical waveguides, wherein, for

Art Unit: 2874

each optical waveguide, the AWG is adapted to route light having a corresponding center wavelength from the input port to the output port coupled to the optical waveguide as recited in claims 26 and 30 and wherein at least two optical waveguides have different functional layers adapted to bind different analytes as recited in claims 28 and 31.

5. Claims 1, 3-13, 15-24 and 32-38 are allowed.

The prior art of record fails to disclose or reasonably suggest a method and a device comprising a plurality of grooves in the optical waveguide from the first grating; at least some of the grooves are covered by the functional layer; further a device comprising a MZI having two arms, wherein one arm has an optical resonator which has a functional layer adapted to bind an analyte and further wherein one arm of the MZI includes the optical waveguide having the first and second gratings form an optical resonator in combination with the other limitations of claims 1, 12, 22, 24, 32 and 35.

### ***Response to Arguments***

6. Applicants' argument filed on January 9, 2006 has been fully considered.

With respect to claims 1, 3-13 and 15-24, the applicants have amended claims 1, 12 and 24 to include the allowable features. Claims 1, 12 and 24 are therefore allowed.

With respect to claim 22, the examiner fully agrees with the applicants' arguments on pages 7 and 8. Thus, claim 22 is allowed.

With respect to newly added claims 25-38:

Please refer to claim rejections 35 U.S.C. 102 above for claims 25 and 29.

Claims 26-28, 30 and 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 32-38 are allowed.

### ***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer Doan whose telephone number is (571) 272-2346. The examiner can normally be reached on Monday to Thursday from 6:00 am to 3:30 pm, second Friday off.

Art Unit: 2874

9. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JD

March 17, 2006



JENNIFER DOAN  
PRIMARY EXAMINER